# Lab #6

Multivariate Analysis of Variance

Copy and paste any results and write out your answers in the space provided.

## SPSS

1. Using “**forclass.sav**”

1.a. Run a multivariate Tau Squared analysis (this is called Tau Squared (Τ2) because it is the multivariate equivalent of a t-test) by going to **Analyze** 🡪 **General Linear Model** 🡪 **Multivariate**.

1.b. Predict **sos**, **ego**, **n**, **e**, **o**, **a** and **c** by **gender** (assume 0 is male and 1 is female). Include descriptives, estimates of effects size, homogeneity tests and graphs of gender.

1.c. Copy and paste output below and then annotate and interpret (make sure to include alpha adjustment in the univariate tests)

**HIGHLIGHT HERE AND PASTE OUTPUT FROM 1.c.**

1. Using “**survey.sav**”.

2.a. Perform a MANOVA predicting *total optimism*, *total mastery*, *total positive affect*, *total life satisfaction*, *total perceived stress*, *total self-esteem* and *total social desirability* by *source of stress*. Include descriptives, estimates of effects size, homogeneity tests and Scheffe tests. Copy and paste output below and then annotate and interpret.

**HIGHLIGHT HERE AND PASTE OUTPUT FROM 2.a.**

2.b. Repeat 2.b. but predict by *source of stress* **AND** *marital status*. Include descriptives, estimates of effects size and homogeneity tests. Copy and paste output below and then annotate and interpret.

**HIGHLIGHT HERE AND PASTE OUTPUT FROM 2.b.**

2.c. Perform a Roy-Bargman stepdown procedure of 2.b. using the order in the data (total optimism, total mastery, total positive affect, total life satisfaction, total perceived stress, total self-esteem and total social desirability). Copy and paste output below and then annotate and interpret.

**HIGHLIGHT HERE AND PASTE OUTPUT FROM 2.c.**

1. Using “**MANOVA.sav**”.

3.a. Do all appropriate screening tests.

3.b. Run a MANCOVA predicting *self-esteem, introversion-extroversion* and *neuroticism* by *andrm* using *control* and *attrole* as covariates. Include descriptives, estimates of effects size and homogeneity tests in the analysis.

3.c. Include a planned comparisons of masculine versus feminine, masculine and feminine vs. undifferentiated and androgynous, and undifferentiated vs. androgynous (hint: you must use syntax, refer to T&F for syntax to add the covariates using “WITH”). **Are these orthogonal?** **Do you need to adjust for multiple tests?** Copy and paste output below and then annotate and interpret.

**HIGHLIGHT HERE, PASTE OUTPUT AND QUESTIONS FROM 3.c.**

3.d. Write a results section including at least one APA style table and one APA style figure.

1. Using the example in T&F, write matrix syntax in SPSS to show all the steps to calculating the sums-of-square-and-cross-products (SSCP) matrix for disability, the determinant of the SD matrix, the determinant of the SD + SS(DT) matrix, Wilk’s Lambda and the approximate F for Wilk’s Lambda. Yes, all through syntax. Copy and paste the syntax and the output below. Interpret and annotate.

**HIGHLIGHT HERE AND PASTE SYNTAX AND OUTPUT FOR 4.**